

## Abstract of Disclosure

A method is disclosed for controlling operation of an engine coupled to an exhaust treatment catalyst. Under predetermined conditions, the method operates an engine with a first group of cylinders combusting a lean air/fuel mixture and a second group of cylinders pumping air only (i.e., without fuel injection). In addition, the engine control method also provides the following features in combination with the above-described split air/lean mode: idle speed control, sensor diagnostics, air/fuel ratio control, adaptive learning, fuel vapor purging, catalyst temperature estimation, default operation, and exhaust gas and emission control device temperature control. In addition, the engine control method also changes to combusting in all cylinders under preselected operating conditions such as fuel vapor purging, manifold vacuum control, and purging of stored oxidants in an emission control device.